



Technical Information

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Cable Characteristics

Mud Resistant

The suitability of sheathing materials for use in areas in which the cables are exposed to drilling fluids is heavily dependent upon the type of fluid present. Each type of fluid contains additives which can have a deleterious effect on the sheathing material.

According to NEK 606, the mud resistant cables shall have a SHF Mud sheath that comply with the requirements in IEC 60092-359 for SHF2 and the below specified. The mud resistant cables shall be designed with sheathing compounds suitable for installation and operation in contact with MUD unless otherwise specified.

The MUD resistance test requirements for sheathing compounds SHF Mud are as follows:

Test fluid	Temperature	Duration	Tensile Strength & Elongation At Break Variation	Volume Swell Variation	Weight Increase Variation
Mineral oil type - IRM 903	100°C	7 d	30%	30%	30%
Calcium Bromide Brine (Waterbased)	70°C	56 d	25%	20%	15%
Carbo Sea (oil based)	70°C	56 d	25%	20%	15%

Oil Resistance

All thermoset sheathed cables shall be suitable for an oil production installation. The oil resistance properties shall be demonstrated by a test according to IEC 60092-359 SHF2.

Flame Retardance

The cables shall withstand the test specified in IEC 60332-3-10, -22, -23, -24, -25. Single, earth and bonding wires shall withstand the test specified in IEC 60332-1 or IEC 60332-2.

Fire Resistance

Fire resistance cables shall be tested according to IEC 60331-11, -12, -21, -25 and -31.



Hydrocarbon (HCF) Fire Resistant

The purchaser shall specify which of the curves below in Figure 1 or 2 to comply with the HCF test.

The test requires no breakdown for 30 or 60 minutes when connected to operating voltage. Time to breakdown to be considered in agreement with the customer or approval authority.

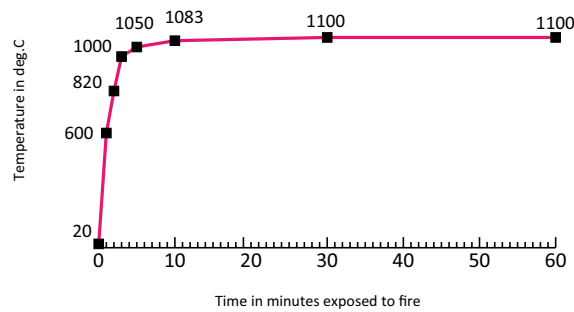


Fig.1 HC fire curve based on Exxon calculations, which required functional security for 15 minutes

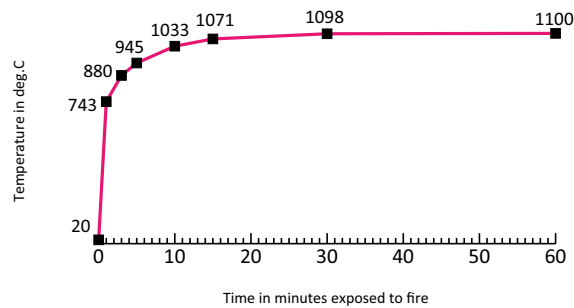


Fig.2 International recognized HC fire curve.

Content of Halogen

All cables shall be halogen-free according to IEC 60754-1/2.

Smoke Emission

During a cable fire smoke emission shall be kept to a minimum value of 60% according to IEC 61034-1/2.